REMARKS

Claims 1, 4 – 9 and 11 – 14 are pending in the present application. Claim 1 has been amended, Claim 9 has been canceled, leaving Claims 1, 4 – 8 and 11 – 14 for examination upon entry of the present amendment.

Support for the amendment to Claim 1 can be found in Table 2 on page 40 of the clean version of the substitute specification. Examples 2 and 3 show that the weight average molecular weight is 4,100,000 while Example 10 shows that the weight average molecular weight is 9,100,000.

The Applicants respectfully request allowance of the claims based on the following remarks.

Specification

The Applicants desire a substitute specification to be entered. In accordance with 37 CFR 1.125(b), the Applicants hereby affirm that "[T]he substitute specification includes no new matter". Both the clean version and the marked up version are hereby being re-filed with the U.S.P.T.O.

Claim Rejections Under 35 U.S.C. § 102/103

Claims 1 and 4 – 8 are rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 6,309,739 to Koizumi et al. (hereinafter Koizumi) (see Office Action dated 03-19-2009, page 3)

In making the rejection, the Examiner has stated that "the reference discloses in Example 4, a three stage process of making an acrylate copolymer wherein the first stage makes butyl acrylate/methyl methacrylate copolymer crosslinked with allyl methacrylate, the second stage makes butyl methacrylate crosslinked with allyl methacrylate and the third stage makes uncrosslinked butyl acrylate/methyl methacrylate copolymer." (see Office Action dated 03-19-2009, page 3)

To anticipate a claim under 35 U.S.C. § 102, a single source must contain all of the elements of the claim. *Lewmar Marine Inc. v. Barient, Inc.*, 827 F.2d 744, 747, 3 U.S.P.Q.2d 1766, 1768 (Fed. Cir. 1987), *cert. denied*, 484 U.S. 1007 (1988).

The Supreme Court has recently reaffirmed the principle that "a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the art.... This is so because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known." *KSR Int'l. Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007). The Court further stated that "[r]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *Id.* (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

Claim 1 as presently amended is directed *inter alia* to an acrylic copolymer composition comprising an alkyl acrylate crosslinked polymer formed by the polymerization of 5-15 weight % of a crosslinking agent and alkyl acrylate monomer; and a non-crosslinked copolymer formed by the polymerization of 55-90 weight % of methyl methacrylate with 5-40 weight % of at least one monomer selected from the group consisting of alkyl acrylate compounds and alkyl methacrylate compounds, wherein the weights are based on the whole weight of the crosslinking agent and the monomer components, wherein the non-crosslinked copolymer has a weight average molecular weight of 4,100,00 to 9,100,000.

Koizumi teaches a methacrylate, resin composition which comprises (A) 5 to 50% by weight of a crosslinked acrylate elastomer having a two layer structure of a crosslinked polymer component (a-1) and a crosslinked polymer component (a-2) wherein the component (a-1) is located on the inner side or the outer side and the component (a-2) is located on the outer side or the inner side, and (B) 95 to 50% by weight of an alkyl methacrylate polymer prepared by polymerizing an acrylic monomer containing 80 to 100% by weight of an alkyl methacrylate and 20 to 0% by weight of an alkyl acrylate in the presence of a chain transfer agent and in the presence or absence of the elastomer (A).

Koizumi does not teach any particular molecular weight for the alkyl methacrylate polymer. The claimed invention in particular is directed to a non-crosslinked copolymer that has

a weight average molecular weight of 4,100,00 to 9,100,000. For this reason at least, Koizumi does not teach all elements of the claimed invention.

One of ordinary skill in the art reading Koizumi would find no motivation to modify Koizumi to include weight average molecular weights of 4,100,00 to 9,100,000.

In addition there is no expectation of success. Tables 1 and 2 demonstrate that not all combinations of the claimed constituents and weight average molecular weights for the copolymer form successful products. For example, in Table 2 it may be seen that the Examples 1 – 9 form excellent uniformity of foamed cells, while the Comparative Examples 1 – 7 do not produce such good results.

As shown in Table 2, the vinyl chloride resins of Examples 11 – 20 prepared using the acrylic copolymers of Examples 1 – 10 in which a crosslinked polymer was prepared from allyl methacrylate (as the crosslinking agent) and an alkyl acrylate, exhibited superior foam density, expansion ratio, and uniformity of foamed cells. As further indicated in the Table 2, the vinyl chloride resins of Examples 19 and 20 prepared using the acrylic copolymers of Examples 9 and 10 exhibited increased melt strength due to the high molecular weight of the acrylic copolymers resulting in uniform foamed cells.

Since Koizumi does not teach all elements of the claimed invention and there is no expectation of success, the Applicants respectfully request a withdrawal of the rejection and an allowance of the claims.

Claim 9 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Koizumi. (see Office Action dated 03-19-2009, page 5)

Claim 9 has been canceled rendering this rejection moot.

Conclusion

In view of the foregoing, it is respectfully submitted that the instant application is in condition for allowance. Accordingly, it is respectfully requested that this application be allowed and a Notice of Allowance issued. If the Examiner believes that a telephone conference with Applicants' attorneys would be advantageous to the disposition of this case, the Examiner is cordially requested to telephone the undersigned.

In the event the Commissioner of Patents and Trademarks deems additional fees to be due in connection with this application, Applicants' attorney hereby authorizes that such fee be charged to Deposit Account No. 06-1130.

Respectfully submitted,

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